

TWENTY NEW COLEOPTERA FROM THE FLORISSANT SHALES

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Recent studies on the fossil Coleoptera of Florissant show that the subject is by no means exhausted. The writer has described, and for the most part figured, some two hundred and seventy-eight species additional to those made known by Seudder, Cockerell and Beutenmueller, the entire beetle fauna specifically characterized to date reaching four hundred and ninety-four. No other deposit is nearly as rich, as far as records show. About all of the larger families are represented, as well as many of the smaller ones, though the relative specific development in some groups seems to have been different at Florissant from what we see to-day. In the original discussions of this fauna, it was referred to the Oligocene, but it is now generally admitted to belong to the Miocene, chiefly on the testimony of the plant remains since no data as to the mammalian life are available.

The species described in the present paper are, in part, of particular interest. The occurrence of a beautifully preserved *Pactopus*, showing the generic characters in remarkable detail, is worthy of special note. Three new Cerambycidae are added to the already fairly good-sized representation of this family and two Tenebrionidae of types not hitherto known from these shales have been detected.

Arranged by families, the new species are:

CUCUJIDAE

Lithocoryne coloradensis

CLERIDAE

Necrobia sibylla

LATHRIDIIDAE

Corticaria acterna

PTINIDAE

Gastrallanobium subconfusum

THROSCIDAE

Pactopus americanus

SCARABAEIDAE

BUPRESTIDAE

Melanophila heeri

Aphodius inundatus

Serica cockerelli

CERAMBYCIDAE

Scaptolenopsis wilmattae
Palaeosmodicum hamiltoni
Hylotrupes puncticollis
Acanthoderes lengii

CHRYSOMELIDAE

Lema lesquereuxi
Luperodes submonilis

TENEBRIONIDAE

Ulus minutus
Proteleates centralis

CISTELIDAE

Isomira aurora

MORDELLIDAE

Mordellistena scudderiana
Mordellistena nearctica
Mordellistena protogaea

All of the figures were drawn by the writer, using a camera lucida. They are intended to show the outlines of the sclerites as far as they can be discerned, and the courses of the principal lines of sculpture. Nothing has been restored. No attempt has been made to indicate adventitious markings due to imperfections of the stone or to bits of adhering foreign matter.

Lithocoryne coloradensis sp. nov. (Plate V, figs. 1, 2, 3.)

General form elongate, similar to that of *L. gravis*, but differing in thoracic outline. Head large though not as wide as the prothorax, front and vertex deeply and, relatively to the size of the insect, fairly coarsely punctured, closely along the anterior, posterior, and lateral margins but more sparsely at the middle. Eyes not well preserved, but what remains indicates them to have been of moderate size. Antennae not long enough to reach the prothoracic base, first joint large, about one and one half times as wide as the next, second to eighth subequal, about as long as wide, ninth to eleventh forming a well defined but hardly abrupt club, about twice as wide as the stem. Prothorax, if complete, about one and two-thirds times as broad as long, but one side is broken off. The other is nearly straight behind the middle, thence gently arcuate to apex, the front angle only slightly prominent, margin distinct and moderately broad. The prothorax was, therefore, of approximately equal width from the base to the middle, thence gently narrowed to apex. Punctuation less deep and more sparsely placed than on the head, but of about the same size. Scutellum strongly transverse. Elytra obscurely striatopunctate, the punctures less pronounced than those of the thorax though of slightly larger size near the base. Underside of head strongly and very closely punctate on the cheeks, middle smoother. Prosternum punctured at the sides of the base, fairly closely but much more finely than the head, the flanks apparently only slightly wrinkled, prosternal process roughened but with no defined punctures. Mesosternum strongly, almost confluent punctured in front of the coxae, side pieces finely sculptured. Metasternum weakly or finely sculptured at middle, more strongly at sides. Abdominal segments partly

covered by the legs (which are not shown in the sketch) the exposed portions closely, moderately finely and not deeply punctate. Legs short, none of them very well preserved. Length, from front of head to elytral apex, 5 mm.

Described from one specimen, with counterpart, found by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

This is the third species assigned to *Lithocoryne*. All of them have the same type of antenna and agree in size and general form. They may be separated by the subjoined table.

Prothorax broadest anteriorly, sides nearly straight from near the front angles to the base.....*gravis* Scudder

Prothorax with side margins strongly, regularly arcuate
arcuata Wickham

Prothorax broadest at base, side margins slightly arcuate
coloradensis n. sp.

***Corticaria aeterna* sp. nov.** (Plate V, fig. 4.)

Form of the usual type of the genus except that the prothorax is wider than normal. Head only moderately prominent, eyes large, surface between them minutely closely punctured. Prothorax twice as wide as long, broadest near the base, sides almost regularly arcuate, surface relatively coarsely and extremely closely punctured. Elytra nearly four and one-half times the prothoracic length, punctuation confused, similar to that of the prothorax but a little finer, (more especially apically), and less close. Length, to abdominal apex, 2.90 mm.; to elytral tip, 2.65 mm.

Described from one specimen, with counterpart, collected by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

Distinguished from all the other Florissant forms assigned to this genus by its size and the relative proportions of the prothorax and elytra. It is larger than most of the modern species but is surpassed in this respect by some of them.

***Pactopus americanus* sp. nov.** (Plate VI, fig. 10.)

Form rather stout for this family, broadest across the neighborhood of the humeri, well tapering posteriorly. Head finely but roughly punctate on the small portion of the front that can be seen. Eye not definable except a small portion which shows above the antenna and is rather coarsely faceted. Antennae well separated at base, first joint nearly twice as long as wide, second and third a little longer than any one of the five succeeding, which are subequal to each other, ninth, tenth and eleventh much longer, forming an obscure club. Prothorax strongly cribrately punctured

on the flanks, antennal grooves well marked and much arcuate, prosternum wedge shaped, narrowed behind, the front margin arcuate, face minutely punctulate, a deep longitudinal stria along each side. Mesosternum emarginate. Metasternum nearly smooth at middle, coarsely but not closely punctate laterally, the side pieces more coarsely and densely, tarsal grooves extending obliquely outwards and backwards from the middle coxae, very slightly arcuate. Hind coxal plates rather narrowly wedge shaped, their inner posterior margins, (perhaps accidentally), irregularly dentate. Under side of abdomen deeply, closely, and rather coarsely punctate, the punctures becoming more or less confluent longitudinally, which, with the coating of hairs, gives the appearance of irregular striation. Second, third and fourth abdominal segments subequal, first and fifth longer. Tarsal grooves convergently arcuate anteriorly, straight and divergent posteriorly, reaching to the apex of the third segment. Legs short, rather slender. Length, 3.80 mm.

Described from one specimen, showing the underside only, collected by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

Not the slightest doubt can be entertained as to the relationships of this insect. It is a *Pactopus* in all characters of importance though plainly specifically different from the recent *P. hornii* of our Pacific coast. The modern insect has the prosternum and the middle of the metasternum much more strongly punctured, the antennal clavation a little less pronounced and the abdominal tarsal grooves more arcuate and convergent. Both are similarly hairy and of about the same size.

Melanophila heeri sp. nov. (Plate VI, fig. 11.)

Form moderately elongate. Head rather large, extremely closely but not coarsely punctate between the large eyes. Prothorax about twice as wide as long, damaged on one side, the other indicating that the greatest width is well in front of the middle and that there is no angulation, but the sides narrow regularly and arcuately anteriorly and are nearly straight posteriorly from the widest point. Surface punctuation moderately coarse, confluent transversely so as to give the appearance of striation in that direction. Elytra nearly four times as long as the prothoracic median line, the sides subparallel to behind the middle, apex of the more perfect one rounded but not so bluntly as in *M. cockerellae*. Surface finely punctured, the punctures a little coarser at sides and near the apex, not extensively confluent anywhere and generally well separated. Legs wanting. Length, to elytral apices, 10.50 mm.

Described from one specimen, with counterpart, collected by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

Compared with recent North American species, this is most like *M. drummondi* though different in the form of the prothorax and the more finely sculptured non-costate elytra. It is easily distinguished from the Florissant fossil *M. handlirschi* by not having pointed elytral apices and from *M. cockerellae* in being much more slender. The under side of the prothorax has a reticulate sculpture giving it a scaly look like that of corresponding parts on *M. drummondi*.

Necrobia sibylla sp. nov. (Plate V, fig. 5.)

Form only moderately elongate, sides subparallel. Head roughly semi-circular in outline, the length, however, considerably less than the breadth, surface finely and sparsely punctured. Antenna clavate, not reaching to the prothoracic hind angle, the individual joints not well enough preserved for description. Prothorax about one and two-thirds times as broad as long, narrower at base, sides moderately arcuate, surface closely and regularly, moderately deeply but not coarsely punctured, each puncture with a minute point in the center which may mark the former attachment of a hair. Elytra moderately long, apices rounded, punctuation fine and deep but sparse and not arranged in striae. Legs short and slender. Length, to abdominal apex, 5.85 mm.

Described from one specimen collected by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

Likely enough this is not a true *Necrobia*, but there is nothing upon which to base generic separation aside from the differently shaped prothorax and the nature of the elytral punctuation. This last is about like what we see in the recent *Enoclerus abruptus coccineus*, but the fossil can hardly belong to the latter genus. It is larger than *N. divinatoria* and differently proportioned as will be seen by a comparison of the figures.

GASTRALLANOBIUM gen. nov.

Form about that of *Gastrallus*. Eye large, transverse. Antennae with long basal and short intermediate joints, club apparently three-jointed, narrow. Prothorax strongly projecting over the head, the sharp side margin much less oblique than in *Gastrallus* and not deflexed anteriorly. Legs short. Elytral sculpture punctato-striate.

Type.—*G. subconfusum* sp. nov.

Gastrallanobium subconfusum sp. nov. (Plate VI, fig. 12.)

Form moderately elongate, parallel. Head of moderate size, evidently entirely concealed from above during repose, front just visibly punctured,

antennae rather short. Prothorax projecting anteriorly, the outline of the front edge of the flank strongly emarginate below the overhang, side margin strong, relatively little curved in profile, back only slightly arched, notum strongly and closely moderately coarsely punctured, flanks more sparsely. Elytra with fairly regular striae of small, rounded, distant punctures, the basal region confusedly punctate for the full width. Abdomen obscurely reticulate. Length, 2.65 mm.

Described from one specimen taken by myself at the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

Considering its small size, this insect is remarkably well preserved. It is more like *Gastrallus* than anything else that I know and if one could be sure that the antennal structure is correctly interpreted the assignment in this neighborhood might be made with a good deal of confidence.

Aphodius inundatus sp. nov. (Plate VII, fig. 15.)

Form quite stout. Head of moderate size, clypeus broadly rounded, anteriorly sparsely punctured, the punctuation becoming coarser and closer on the front and again finer and sparser on the vertex, but everywhere distinct and well separated. Prothorax narrower at apex than at base, sides broadly arcuate, surface about evenly and extremely closely though not confluent punctured. Elytra broad, the extreme tips not exposed, surface regularly striate, the striae practically equal in width to the interspaces, neither with any sign of punctuation. The interspaces are perfectly flat, as are also the bottoms of the striae. Scutellum small, triangular. Underside finely and, in the main, moderately closely punctured. Legs very short and stout. Length, as preserved, 6.25 mm.; in life, a little more.

Described from one specimen, with counterpart, collected by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

The underside shows the clypeus a little better than the other and indicates that it may have had a broad shallow anterior emargination. I cannot find any recent species with just this type of sculpture and all the other Florissant fossil Aphodii differ by the same character. Possibly a perfect specimen would indicate another generic reference.

Serica cockerelli sp. nov. (Plate VII, fig. 16.)

Form stout, ventricose in side view. Head, in profile, about half the height of the prothorax, the latter not so high at apex as at base, sculpture weak and obscure. Elytra without defined sculpture, other than faint indications of alternations of striae and interstitial spaces. Abdominal

segment subequal, sutures regularly curved. Legs stout, too poorly preserved for description. Length, 11 mm.; of elytron, about 7 mm.

Described from one specimen, with counterpart, found by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

About the size of the recent North American *S. vespertina*, and apparently similarly sculptured on the elytra. It is much larger than *S. antediluviana*, the only fossil species heretofore known from Florissant.

SCAPTOLENOPSIS gen. nov.

Head of moderate size, narrower than the prothorax, mandibles stout, curved, projecting, labrum apparently closely connate, the suture entirely obliterated. Antennae 10-jointed, only very slightly serrate, second joint extremely short, third longer than the first. Prothorax margined, but the sides are partly hidden by the antennae so that the armature, if present, is obscured. Elytra obscurely and rather closely striate.

Type.—*Scaptolenopsis wilmattae* sp. nov.

Scaptolenopsis wilmattae sp. nov. (Plate VIII, fig. 19.)

Form moderately stout. Head, including the jaws, as long as the prothorax, length and width equal, sculpture extremely fine and close with vestiges of a covering of short delicate hairs. Labrum pointed at apex. Mandibles stout, outer edges arcuate, exposed on each side of the labrum and moderately roughly closely punctured in such a way as to give the effect of longitudinal striation. Antennae inserted in front of the main portion of the eyes and slightly between them, rather slender, joints beyond the third not very unequal in length, the entire organ less than one-half the length of the body. Prothorax not showing the lateral outlines at all well but it is narrowed anteriorly and, near the base, not far from twice as broad as long. The surface is minutely sculptured and finely, rather closely hairy. Scutellum small, triangular. Elytra subparallel at sides, apices broken, surface with a covering of fine, short, rather close hairs, striation neither very well defined nor deep, but rather close. Epipleural margin well shown on one elytron, apparently wide. Legs rather short, not much thickened, tarsi with the proximal three joints strongly pubescent beneath. Length, as preserved, 20 mm.

One specimen collected at Station 17, Florissant, Colorado, by Mrs. W. P. Cockerell, after whom it is named. The type is in the University of Colorado Museum.

This is a puzzling insect, having, at first sight, the general appearance of *Scaptolenus* in the Cebrioninae. Analysis of the

characters shown indicates the propriety of placing it in the Cerambycidae, where it seems to go into the Prioninae by the form, antennal structure and connate labrum. In general, it is probably allied to the Solenopterini, fairly well represented today in tropical America. The color seems to have been a uniform brown, like that of most modern Prioninae.

PALAEOSMODICUM gen. nov.

Form similar to that of most of the modern members of the Callidioides. Second antennal joint large. Eyes well developed, granulations not very coarse. Elytra not spinose at tip. Thighs clavate, front coxal cavities confluent.

Type.—*P. hamiltoni* sp. nov.

Palaeosmodicum hamiltoni sp. nov. (Plate VIII, fig. 20.)

Form subparallel, moderately elongate. Head short and broad, eyes suborbicular in vertical view. Antennae incomplete at apices, first joint moderately large and clavate, second about half the length of the third which is nearly equalled by the fourth. The following joints are not distinctly set off, so it is impossible to describe them. Prothorax broader than long, the sides nearly straight, the only visible sculpture a minute inconspicuous punctuation. Elytra unarmed and apparently bluntly pointed at apices, without maculation but finely punctulate, especially at their bases. Thighs clavate, the hind ones particularly so. Length, from front of head to abdominal apex, 18.50 mm.

The type is in my collection. It was collected on the Wilson Ranch, Florissant, Colorado.

This insect seems worthy of generic separation since the assemblage of structural characters, taken into consideration with the facies, does not permit its entry into any of the Callidioid genera that I know. It looks a good deal like a large *Smodicum*, but the confluent front coxal cavities forbid assignment to that genus. The specific name is given in remembrance of an old friend, the late Dr. John Hamilton of Allegheny, Pa.

Hylotrupes puncticollis sp. nov. (Plate VIII, fig. 21.)

Form moderately stout. Head of relatively larger size than in any of the living North American species, finely rugosely punctulate and somewhat hairy. Antennae not quite complete on either side, but what is left indicates that they reach nearly to the elytral apex. The first joint is only fairly enlarged, the second approximately one-third the length of the third, fourth and following shorter, not broad nor spinose as far as can be seen. Prothorax imperfect on the sides but one-half of the specimen

shows them fairly well, here they appear to be nearly regularly rounded, the apex a little narrower than the base, no spines, tubercles, nor other armature. The width is not far from twice the length. Pronotal sculpture of moderately coarse, very crowded punctuation, closer at the sides and leaving a nearly smooth fairly wide median line on the basal half, vestiture sparse and fine. Elytra long, four times the prothoracic length, sides subparallel, apices rounded, punctuation minute, sparse, each puncture with a fine, short hair. Legs short, only moderately stout, hairy. Length, to abdominal apex, 18.75 mm.; to elytral tip, 16 mm.; of one elytron, 11.15 mm.

Described from one specimen, with counterpart, collected by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

Quite unlike any of the other described Florissant Cerambycidae. I have placed it in the Callidioides on account of the form, the short legs, and the relatively short third antennal joint, and have selected *Hylotrupes* to contain it for the present because it seems not unlike that genus in sculpture and leg structure. The description was made up from both slabs while the figure represents only the reverse. This will account for the appearance of certain characters in the diagnosis which are not brought out in the drawing.

Acanthoderes lengii sp. nov. (Plate VIII, figs. 22, 23.)

Body formed much as in the recent *A. quadrigibbus*. Head short, broad, antennal tubercles strong. Antennae longer than the body but not excessively so, first joint clavate, second small, third elongate but nearly equalled by the fourth, the fifth, sixth and seventh successively a little shorter, eighth to eleventh not quite so long as the seventh but subequal among themselves. No antennal hairs are visible nor is there any evidence of coarse punctuation on the joints, though the scape is roughened. Prothorax broad and short, the front coxae well separated by the prosternum. Elytra, as preserved, rather strongly tapering posteriorly, not armed at apices. At their bases they show several scattered deep punctures, only a portion of which are represented on the figure. Legs wanting. Length, 11.25 mm.; of antenna, on chord of arc shown in the figure, 15.50 mm.

Described from a single specimen, with counterpart, collected on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

The characters of this fossil indicate that it is a good *Acanthoderes*. A specimen with counterpart in the Scudder collection, bearing the numbers 3916 and 7747, may also belong here, but

the preservation is rather poor. The insect is dedicated to Charles W. Leng of New York, to whom I am indebted for kindly help and many favors.

Lema lesquereuxi sp. nov. (Plate VI, fig. 13.)

Form stout. Head wide, apparently short, front rather strongly but not coarsely punctate, vertex with a well marked median longitudinal groove flanked each side by an oblique stria. Eyes of moderate size. Antennae quite stout, the distal joints relatively broader. Prothorax with the sides poorly preserved, surface not visibly punctate even under high magnification. Scutellum small, triangular. Elytra distinctly punctate in rows, very strongly at base but faintly near the apex, the sutural row disappearing in a stria. Legs stout but not well displayed. Length, to abdominal apex, 4.35 mm.; to elytral apex, 4.15 mm.; of one elytron, 2.75 mm.

Described from one specimen, with counterpart, collected by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

Much smaller than *L. evanescens* and *L. fortior*. There is no doubt of the correctness of the generic reference.

Luperodes submonilis sp. nov. (Plate VI, fig. 14.)

Form moderately robust. Head of normal size, eye rounded, antenna slender, first and fourth joints long, second and third, though not very well set up, evidently short, fifth and following longer than either of these two but not equal to the fourth. Prothorax without evident sculpture. Elytron not striate, punctuation fine and scattered, distinct at base becoming effaced apically. Legs more or less crushed and distorted but apparently about of normal build. Length, in position preserved, 3.50 mm.

Described from one specimen, with counterpart. The type is in my collection and was found on the Wilson Ranch, near Florissant, Colorado.

Although of small size and fragile build, the fossil is well preserved and suggests *Luperodes* at first sight. The reference is borne out in a general way by the sculpture as well as the facies and the antennae are like those of *Luperodes* except that the shortening of the second and third joints and those succeeding the fourth is more pronounced in the fossil. It may be compared with the recent *L. marginalis* from Texas.

Ulus minutus sp. nov. (Plate VII, fig. 17.)

Form rather broadly oval. Head of moderate size and deeply sunken in the prothorax, sculpture rough but not very coarse. Prothorax with rounded sides, apex much narrower than the base, flanks coarsely, closely and subconfluently punctured, prosternum moderately broad between

the round coxae, much more finely and obscurely punctate than the flanks. Middle coxae a little smaller than the anterior, more widely distant, hind coxae transverse, separated by a broad, rounded, intercoxal process. Elytra about as wide at base as the prothorax, regularly and rather rapidly arcuately narrowing to the apex, striae broad and deep. The nearly uniform, close, and moderately coarse punctuation which shows on the elytra is probably that of the ventral surface of the abdomen since the elytra are overlaid by that part of the body. Legs short, rather stout, the tibiae not or but little expanded. Length, 2.90 mm.

Described from one specimen, found by myself on the Wilson Ranch near Florissant, Colorado. The type is in my collection.

The form, sculpture and general appearance are all those of *Ulus*. In size, it is below that of the recent species known to me. The genus now lives in sandy soil at the roots of plants and the Florissant species may well have had similar habits.

PROTELEATES gen. nov.

Generally similar to *Eleates* in outline and characters of the underside but differing in the round front coxae and presumably in the third and fourth ventral segments of the abdomen which are short, together not longer than the second.

Type.—*P. centralis* sp. nov.

Proteleates centralis sp. nov. (Plate VII, fig. 18.)

Form oblong, sides subparallel. Head not well displayed and, as seen from beneath, not exhibiting any characters of interest. Prothorax much wider than the head, broader at base than at apex, sides moderately arcuate and apparently not crenate or toothed. Flanks beneath moderately deeply, very coarsely and closely punctate, prosternum in front of the coxae transversely rugulose. Sides of the elytra strongly embracing the abdomen, their sculpture showing only on the edges where they are deeply and coarsely punctato-striate. Metasternum inconspicuously punctured at the middle, side pieces more strongly. Abdomen deeply, coarsely, and closely punctured, more finely apically, intercoxal process subtriangular, rounded at tip. Legs wanting. Length, 4.10 mm.

Described from one specimen found by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

This insect is about the size of *Eleates occidentalis*, now living in California, and on the whole seems to approach *Eleates* pretty closely. It differs from all of the Boletophagini known to me by the shortness of the third and fourth ventrals. From the recent *Boletotherus* and *Boletophagus* it departs also in the apparently simple prothoracic side margin.

***Isomira aurora* sp. nov.** (Plate V, fig. 6.)

Form moderately elongate, subparallel for most of the length. Head of normal size, eyes not well defined but remote, front minutely punctulate. Antennae much longer than the head and prothorax united, slender, not serrate, the joints succeeding the second subequal in length. Prothorax much narrowed anteriorly, sides arcuate, width equal to about one and three-fourths times the length, surface minutely punctured and finely, moderately closely hairy. Elytral sculpture and vestiture similar but a little more pronounced. Legs slender, poorly preserved. Length, 10 mm.; to elytral apices, only a very little less.

Described from one specimen, with counterpart, found by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

The measurement is taken from the lower impression, which is not broken at the posterior extremity. The insect is pretty large for *Isomira*, but I think it belongs in that immediate vicinity and the Cistelide genera, at best, are often excessively poorly differentiated.

***Mordellistena scudderiana* sp. nov.** (Plate V, fig. 7.)

Of the usual cuneiform outline, not very slender. Color apparently brownish or testaceous. Head rather small, antennae wanting. Prothorax moderately strongly arched dorsally, surface minutely but clearly punctulate and pubescent. Elytra more or less overlapping, too much damaged to allow their shape to be made out clearly, but the remaining portion is well preserved, showing a fine punctuation, stronger than that of the prothorax, and a pubescent vestiture. Anal style short and strong, pointed at apex. Ventral sclerites of thorax and abdomen smoother than the elytra. Legs lacking except one belonging to the hind pair which has a moderately thickened femur. Length, over all, 4.90 mm.

Described from one specimen, with counterpart, preserved in profile. It was collected by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

Closely related, as far as visible characters go, to *M. protogaea*, but of considerably greater size.

***Mordellistena nearctica* sp. nov.** (Plate V, fig. 8.)

Form slender. Head and prothorax fused together by crushing so that the form of each is obscured. Eye large. Antennae wanting. Elytron narrow, the apex damaged so that its exact shape is not determinable. Abdomen extending well beyond the elytral apices, its tip pointed, the anal style rather long, not much tapered, apex blunt. Hind leg with stout and short femur and tibia, tarsus not defined. Length, to elytral apex, 3.25 mm.; to tip of anal style, 4.15 mm.

Described from one specimen, with counterpart, found by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

In comparison with the other Florissant fossil species, this would come nearest to *M. smithiana*, which is of about the same size. The present insect, however, has relatively a longer abdomen and style, giving it a more slender appearance. The sculpture is an extremely minute, close punctuation and the vestiture has left imprints of close, fine hairs.

Mordellistena protogaea sp. nov. (Plate V, fig. 9.)

Form only moderately slender. Head and prothorax fused by crushing, the shape of each being hardly definable. However, it may be seen that the head is broad and short, not much narrower than the prothorax which is wider posteriorly. Sculpture of both these parts fine and quite close, but readily definable under fairly high power, vestiture moderately dense and short. Elytra, seen from above, tapering posteriorly, apices separately rounded, sculpture similar to that of the prothorax but a little stronger, vestiture also much the same. Anal style short but well differentiated, apparently grooved above, the tip nearly pointed. Length, over all, 3.85 mm.; to apex of elytra, 3 mm.

Described from one specimen, with counterpart, preserved in dorsal and ventral aspects. It was collected by myself on the Wilson Ranch, near Florissant, Colorado. The type is in my collection.

Excepting the smaller size, shorter style and different punctuation, there is nothing definite upon which to separate this insect from *M. smithiana*, but that species is much smoother. The comparison of punctuation was made with a $1\frac{1}{2}$ inch objective and a 3x ocular. A hand lens will not bring it out well. The types of both species are preserved in similar shale and are in good condition as regards the surface characters. Both seem to have been brownish or testaceous in life.

EXPLANATION OF PLATES

PLATE V

- FIG. 1. *Lithocoryne coloradensis*.
 " 2. " " underside.
 " 3. " " antenna.
 " 4. *Corticaria aeterna*.
 " 5. *Necrobia sibylla*.
 " 6. *Isomira aurora*.
 " 7. *Mordellistena scudderiana*.
 " 8. " *nearctica*.
 " 9. " *protogaea*.

PLATE VI

- FIG. 10. *Pactopus americanus*.
 " 11. *Melanophila heeri*.
 " 12. *Gastrallanobium subconfusum*.
 " 13. *Lema lesquereuxi*.
 " 14. *Luperodes submonilis*.

PLATE VII

- FIG. 15. *Aphodius inundatus*.
 " 16. *Serica cockerelli*.
 " 17. *Ulus minutus*.
 " 18. *Proteleates centralis*.

PLATE VIII

- FIG. 19. *Scaptolenopsis wilmatte*.
 " 20. *Palæosmodicum hamiltoni*.
 " 21. *Hylotrupes puncticollis*.
 " 22. *Acanthoderes lengii*.
 " 23. " " antenna.